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Progress in the implementation of the Programme of Action for the Sustainable Development of Small Island Developing States

Report of the Secretary-General

Addendum

Management of natural and environmental disasters in small island developing States*

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I. Introduction

1. During the final stages of the International Decade for Natural Disaster Reduction (IDNDR) and its closing events, particular emphasis has been put on establishing policies for reducing the impacts of natural hazards on the most vulnerable communities and regions of the world. In general, small island developing States are relatively isolated, have small domestic markets, a fragile environment and relatively limited resources. The combination of those characteristics makes them especially vulnerable.

2. The vulnerability of small island developing States takes effect at such a low threshold that natural disaster reduction should be an essential part in plans for sustainable development. The disastrous social and economic impacts due to hurricanes George and Mitch, as well as the effects of climate variability due to one of the strongest El Niño/La Niña events in recent history, have highlighted the need for integrated long-term prevention and mitigation policies. Billions of dollars in damage in countries whose national output is valued in terms of millions of dollars is an unassailable reason for the need to reduce the risk on an urgent basis. The smallness of small island developing States means that natural disasters combine with other environmental, social, and economic processes, such as climate change, ozone depletion, sea level rise, freshwater shortages, deforestation, economic marginalization consequent to trade liberalization and globalization, and growing poverty, to compound the intensity of risks.

3. The present addendum sets out the basis for the assessment of future needs and for the formulation of policies with regard to disaster reduction in small island developing States.

II. Small island developing States and natural disasters

4. Small island developing States suffer significantly from nearly all types of natural hazards. Weather-related hazards, in particular, and their associated phenomena — rainfall, flooding, violent winds, landslides and coastal storm surges — are a serious potential threat to agriculture, tourism and fisheries, which frequently make up the prime industries and account for a substantial proportion of their gross domestic product. Small island developing States are particularly affected by tropical storms, which have shown an increase both in intensity and occurrence over the Decade, although there was a subsidence in the Caribbean during the first part of the Decade. The Caribbean has suffered from several hurricanes since 1988, in particular hurricanes Gilbert, Hugo, Andrew, George and Mitch, which caused significant and substantial damage. Small island developing States and areas in the Pacific, especially French Polynesia, Fiji, the Cook Islands, Tonga and Samoa, have suffered the same fate. The impact on infrastructure — road, water, electricity, telecommunication and sewage networks — the social impacts and the setback to economic sectors, such as agriculture and tourism, have been considerable. In Saint Kitts and Nevis, a small island of less than 45,000 inhabitants, the total damage due to hurricane George was estimated at over US$ 450 million.

5. In recent years, the islands of Fiji in the South Pacific have suffered from the passage of five cyclones, including hurricane Gavin in February 1997. The death toll was 25, and economic damage was estimated at over US$ 18 million. From September 1997 to August 1998, at the height of the El Niño Southern Oscillation, Fiji was affected by a very severe drought. The cumulative effect of those natural disasters has been devastating to the population, in particular with regard to rural water supply and the tourism and the sugar-cane industries, whose incomes fell drastically.

6. The effects of the El Niño/La Niña phenomenon, which was accompanied by an increase in weather extremes resulting in flooding and droughts, were felt in numerous small island States in the Pacific and Caribbean. In Cuba, rainfall averaged only 50 to 70 per cent of the norm during the wet season but was far above the average during the dry season, falling in intense downpours over short spells. The combined damages to housing, food crops, cattle, beekeeping and fisheries were estimated as US$ 101 million. During the same period, Papua New Guinea suffered from drought that affected over 500,000 people. On 17 July 1998, a magnitude 7 earthquake occurred in Papua New Guinea, which caused three tsunamis 7 to 10 metres high. Over 2,000 people drowned, and housing and crops were destroyed.

7. In the Caribbean, the eruption of the Soufrière Hill volcano in Montserrat has led to a deteriorating situation in the island, with its population dwindling from 12,000 in 1995 to less than 5,000 in 1998. The destruction of infrastructure and the closure of the airport have brought the tourism industry and the economy as a whole to a complete standstill. Such examples highlight not only the vulnerability of small island developing States to natural and environmental disasters but the wide range of hazards that can affect them. The proneness of small island developing States to disasters is due to their geographic location in areas particularly sensitive to climate variability, and/or to the fact that they are situated in areas of high seismicity and volcanic

activity, such as subduction zones or along the mid-oceanic ridge.

III. Future perspectives on disaster reduction in small island developing States

8. The effects of the El Niño Southern Oscillation, the disastrous impacts of hurricanes George and Mitch, the rising costs of natural disasters to small island developing States and the growing impact on their fragile economies are sufficient reason to launch national, regional and global consultations on the necessity for strengthening disaster prevention and preparedness measures and policies to attenuate the impacts of natural disasters on an urgent basis. In view of the fact that natural disasters have an impact on the economy as well as on the environment, the actual cost of emergency response, economic losses and the cost of rehabilitation and reconstruction are much higher than usually estimated, particularly in the case of small island developing States. Due to the island-wide impacts of natural disasters, their economy is affected negatively for years.

9. Natural disasters are not unavoidable. They are the result of a combination of natural hazards, the vulnerability of certain countries and human activities. The impacts of human activities on the climate and on the environment have drastically increased vulnerability to natural disasters. If the impact of human beings can increase the incidence of natural disasters, then a change in human behaviour can alter or at least reduce it. Avoiding or diminishing the impacts of natural disasters is possible, and in order to protect lives, property and the environment it is an imperative.

10. The knowledge and technology to avoid/prevent disasters exist. Our global capacity to understand risk prevention has increased. A global concept to avoid/prevent natural disasters is already embodied in IDNDR. It is vitally important for small island developing States to undergo the transition, at the national and regional levels, towards a culture of risk reduction. Risk reduction plans should not be a mechanical process, in which a natural disaster leads to emergency response and then to remedy, but part of integrated policies to achieve social and economic stability and low risk. Risk reduction, disaster management and emergency response should be part of an integrated framework which should clearly define prevention strategies; this is a vital imperative for the twenty-first century.

11. The following areas need to be given particular attention when implementing disaster reduction policies:

(a) *Climate variability*. The improvement in the science and technology in the area of weather forecasting and related regional and global early warning systems in small island developing States has helped provide forewarning of tropical storms and their possible paths, which helps countries to take precautionary measures. Those technologies need to be upgraded, and emphasis needs to be put on medium and long-term climate forecasting, including the study of such phenomena as El Niño. Improvement in communications and increasing computerization help to provide ready access to knowledge and information on natural phenomena. Studies are being undertaken to better understand such phenomena, which should help in effective preparations for reducing risks from earthquakes, floods, tsunamis and high-wave actions;

(b) *Economic vulnerability, economic impacts and their assessment*. More than other developing countries, small island developing States are vulnerable to external influences. All the natural disasters mentioned in section II above have considerable economic impacts on small island developing States through loss of life, property and damage to the environment. The size of small island developing States and their remoteness mean that the impact of a natural disaster on an island economy is relatively larger in terms of damage per unit of area and costs per capita. It has been shown that hazards with similar incidence and intensity cause greater economic damage in a geographically small country than in a relatively large one, where a proportionally small segment of the economy is likely to be affected. Natural disaster-related risks on the economy of small island developing States involve a degree of predictability; the intensity of the impact of a natural disaster depends on the economic specialization of the country. Insured loss in the Caribbean since 1988 has exceeded $20 million. As a result of rising compensation, insurance companies have either withdrawn from the Caribbean as well as the Pacific, or have made it very costly to provide insurance to cover damages caused by tropical storms. It is generally accepted that there is a need to establish integrated methods to assess the economic losses resulting from a natural disaster in small island developing States. With that end in view, the Economic Commission for Latin America and the Caribbean (ECLAC) has established a platform that will allow for comparison of the economic impact in various sectors and in various regions of a country to allow the international community and national planners involved in disaster reduction to identify priority areas;

(c) *Overall environmental dimension.* The evaluation of environmental damage, including the degradation of natural resources, is often a neglected component of the exercise of impact assessment of natural disasters. That shortcoming is of particular concern to small island developing States, since their economies are usually highly dependent on the natural environment. Small island developing States' ecosystems and environmental infrastructure — water and sanitation, and irrigation systems — are often highly vulnerable to disturbances. Natural disasters occurring in the past three years have caused extensive damage to primary forests, freshwater resources and stormwater drainage systems, fisheries and flood barriers. The vulnerability of coastal ecosystems in several small island developing States is being exacerbated by the dual effects of overexploitation and sea level rise.

IV. Conclusions and recommendations for the future

12. As part of the follow-up to the Global Conference on the Sustainable Development of Small Island Developing States in the area of natural and environmental disaster prevention, a series of recommendations will be provided to the international community through the closing events of IDNDR, i.e, the final programme forum in 1999, which will include small island developing States-specific sessions.

13. The recommendations based on the specific needs of small island developing States will include concrete and integrated policies for sustainable development, with a particular emphasis on disaster reduction aspects, as set out in section III above. They will include innovative elements, such as partnerships between the public and the private sectors in order to establish links between the corporate world of small, medium and international private companies and decision makers at all levels. That approach has proven to be successful and cost-effective in various regions, particularly when it includes specific requirements of insurance companies. The recommendations will constitute an input to the disaster reduction strategy for the twenty-first century.

14. The programmes outlined below are models of regional frameworks or issue-specific frameworks for cooperation that provide an insight into what future regional or international programmes for disaster reduction could be. Because of their smallness, Caribbean, Pacific, Mediterranean, Atlantic and Indian Ocean small island developing States must develop regional institutions or strengthen existing ones and participate actively in international institutions, since it is difficult for individual small island developing States to build up the skill, expertise and information systems necessary for implementing risk reduction programmes. Without relevant information, it would be difficult to convince policy makers and political leaders of the need for including disaster reduction in national development plans.

15. The South Pacific Disaster Reduction Programme (SPDRP) ran for three and half years, starting in 1994, with some activities carried over to June 1998. SPDRP aims to increase the implementation by each country of its own disaster management programme, with greater community participation and effective partnership among the various players, namely, the Government, NGOs, the private sector, regional and international organizations, and donors. The programme will build on its past achievements while introducing new activities. Some of the activities addressed by SPDRP are:

(a) *Community disaster reduction.* Communities in the South Pacific have not yet benefited sufficiently from recent achievements in disaster management. The development of a comprehensive community disaster reduction strategy for each country, which identifies needs and priorities for the delivery of disaster management services down to the community level, is an essential step in ensuring that the involvement of a wide variety of stakeholders follows a joint approach and makes use of the comparative advantage of each group of stakeholders. Workshops will be conducted in selected countries to develop the strategy;

(b) *Disaster management training.* The capacity of country officials to design and conduct disaster management training has been considerably enhanced in recent years. To achieve long-term sustainability, however, some gaps, such as the development of additional training support materials at the regional level for skills development, further strengthening the capacity of Pacific island countries to adapt regional training materials for in-country use, and the establishment of a regional mechanism to coordinate disaster management training support, still need to be addressed;

(c) *Disaster mitigation.* The need to incorporate the assessment of natural hazards at the policy and planning levels remains a high priority given the danger that natural hazards pose to national development efforts.

16. The Association of Caribbean States (ACS) is an intergovernmental body that brings together the Caribbean island States and territories, Central America, Mexico, Colombia and Venezuela. A Council of Ministers of Foreign Affairs has been set up to head the Association. In 1997, a

special group on natural disasters was created as part of the Special Committee for the Protection and Conservation of the Environment and the Caribbean Sea. In December 1998, during the fourth meeting of the Council of Ministers, two projects related to disasters and environment were approved for submission to the next presidential summit, to be held at Santo Domingo in April or May 1999. The projects involve an environmental strategy for the Caribbean and instrumental mechanisms, and a regional cooperation agreement for natural disaster management.

17. The strategy outlines the following programmes and activities, to be undertaken in the area of natural disasters as part of ACS concerns: identifying regional priorities; identifying vulnerable sectors in the countries; creating regional and national databases on regional and national projects for disaster reduction; creating or strengthening regional and national centres, with databases for natural disaster prevention, mitigation, preparedness, research and response; creating a regional database on current legislation related to disaster management; collecting, selecting and approving multinational projects for disaster prevention and mitigation, for presentation to the authorities of the ACS special fund; and promoting the dissemination of information and programmes of public information and education to create a disaster prevention awareness.

18. In accordance with paragraph 10 of General Assembly resolution 52/200 on international cooperation to reduce the impact of the El Niño phenomenon, an international seminar on the theme "El Niño: evaluation and projections" was held at Guayaquil, Ecuador, from 9 to 13 November 1998. It was based on the report of the Secretary-General on international cooperation to reduce the impact of the El Niño phenomenon (A/53/487), which sets out recommendations for further action to prevent the impact of future El Niño events. The intergovernmental meeting of experts provided a first international platform for a comprehensive scientific and technical retrospective, including a global description of the phenomenon; an overview of the climate anomalies and socio-economic impacts for the various regions affected by El Niño, including the South Pacific and the Caribbean; the current state of climate predictability, and the ability of applying such predictions to decision-making. The meeting also established synergy between science and technology and operational issues, in particular the concerns of the vulnerable communities. This was achieved through four discussion panels on economic, environmental, developmental and social concerns. It also provided the opportunity to share information with the people concerned, and to understand the concerns of the affected populations.

19. That ongoing United Nations strategy is of particular concern to small island developing States because of their geographical location and vulnerability. The recurring aspect of El Niño Southern Oscillation phenomena (2 to 3 years for small events, 7 to 11 years for large events) and its direct link to loss of life and the destruction of economic resources in the South Pacific region and the Caribbean underline the need for small island developing States to actively participate in it through regional and national institutions, national IDNDR committees, and through active participation in the second intergovernmental meeting of experts, which will take place at Lima, in September 1999.

20. An international conference on early warning systems for the reduction of natural disasters was held at Potsdam, Germany, in September 1998. The meeting produced the Potsdam Declaration, which provides related recommendations for disaster reduction and the prevention of loss of life and property. It is often because of the inability of vulnerable small island developing States to predict natural disasters and provide timely and effective warning of their occurrence that lives and property are lost. The subsequent focus on relief and recovery undermines their ability to devote adequate financial resources to sustained social and economic development.

21. The Potsdam Declaration underlines the fact that early warning is the most practical and effective measure for disaster prevention. It emphasizes the multidisciplinary and multisectoral character of the early warning process. Although it is based on science and technology, early warning must be tailored to serve people's needs, their environment and their resources. Though most small island developing States share the characteristics of vulnerability, their social, cultural and political characteristics are diverse. Therefore, when considering early warning systems for small island developing States, the formidable challenge is to design mechanisms which take into account the regional needs and technical capacities while recognizing each State's sovereignty and autonomy. A strong case could be made in both economic and political terms for investment in effective early warning systems, in spite of their high cost, particularly when account is taken of the human and economic losses commonly associated with inadequate warning. And although every small island developing State does not have the financial resources to build its own early warning infrastructure, each must have the capacity to warn vulnerable citizens of impending natural and environmental threats.

22. The General Assembly in its resolution 53/1 B calls for effective collaboration among the international financial

institutions and the bodies and agencies of the United Nations system to assist the Governments of countries affected by hurricane George in identifying their medium and long-term requirements as a basis for mobilizing necessary resources for rehabilitation and reconstruction activities. In that context and within the framework of IDNDR, an inter-agency approach supported by the appropriate United Nations organizations involving, *inter alia*, United Nations Development Programme and World Health Organization regional offices, needs to be considered in order to establish long-term sustainable development and disaster reduction strategies for Antigua and Barbuda, Cuba, the Dominican Republic, Haiti, Saint Kitts and Nevis and other small island developing States. The multisectoral and interdisciplinary character of such a strategy has proven to be effective in the work carried out by the United Nations Inter-Agency Task Force on El Niño.